

REMARKS

The Office Action mailed September 12, 2007 has been carefully reviewed and considered. Claims 1 – 30 are pending in the application. Claim 1 has been amended. Claims 6 and 21 are canceled. Claims 10 - 15 and 25 – 30, withdrawn from consideration, are canceled with this amendment.

Support for the amendments and new claims is found in the specification, drawings, and claims as originally filed. Applicants respectfully submit, therefore, that the amendments and new claims do not add new matter.

The 35 U.S.C. § 103 (a) Rejection

Claims 1 - 4 and 29 - 32 were rejected under 35 U.S.C. § 103 (a) as being allegedly unpatentable over European Patent No. EP1128316A1/U.S. Patent No. 6,940,545 to Ray et al. (Ray) and further in view of U.S. Patent No. 6,151,073 to Steinberg et al. (Steinberg).

Applicants respectfully maintain that the proposed combination of Ray and Steinberg does not render the claimed invention obvious. Claim 1, as amended, for example, includes the following limitations.

“Within a digital acquisition device with a built in flash unit, a method of perfecting the exposure of an acquired digital image using face detection in said acquired image, comprising:

(a) identifying a plurality of groups of pixels that correspond to plurality images of faces within said digitally acquired image, and determining corresponding image attributes to said group of pixels, said groups of pixels of faces being given a certain weight based on a distance of said groups of pixels to the device;

(b) performing an analysis of said corresponding attributes of said groups of pixels;

(c) determining to activate said built-in flash unit based on said analysis; and
(d) determining an intensity of said built-in flash unit based on said analysis.”

(Amended claim 1) (Emphasis added)

Applicants respectfully submit that the limitation of the groups of pixels of faces being weighted based upon their distance to the device is not disclosed in Steinberg or Ray, nor is it obvious in light of the teachings of either of these references, alone or in combination.

In rejecting claim 6, now canceled, the Examiner has stated that Steinberg discloses basing the weight criteria on the distance of the groups of pixels to the camera. The Examiner has stated:

“Regarding claims 6 and 7, Steinberg discloses said weight criteria being calculated based on distance of said groups of pixels to the camera and based on relative sizes of said groups of pixels. (col.2, lines 50 – 52; col.8, lines 19 – 56)”

(Office Action mailed September 12, 2007, p. 4, para. 4)

Applicants respectfully submit that a thorough reading of this section of Steinberg makes clear that the limitation as claimed is not disclosed. Steinberg discloses the following.

“It is a still further object of the present invention to provide a camera that determines flash exposure based on center weight subsampling.”

(Steinberg, col. 2, lines 50 – 52)

Steinberg further discloses:

“The "sample image" block 71 of FIG. 3 is more fully described with reference to FIGS. 4a and 4b. The image optical pick-up 30, such as a charged coupled device (CCD), contains thousands of individual receptors, i.e. pixels (picture elements). An analysis of the output of each of these elements would be a very expensive project, and for this reason the pixels are sampled (block 71). For example, suppose there were 300,000 pixels. In order to bring the analysis down to a more economical level, 1000 of the pixels could be selected from the 300,000. The number of pixels and the following numbers and graphs are given by way of illustration of the method and apparatus of the present invention, and are not to be considered as limiting, since any number of pixels or any sample quantity could apply. In the example selected for illustration, a significantly greater number of pixels are sampled from the center area relative to the edges since the center of the image usually contains the primary subjects of the photography. This

selective sampling gives greater weight to the lighting of the more important area of the image. For example, suppose square 104 of FIG. 4 is the total area of an image. For illustration, it is partitioned into a center region 106 and an edge region 108. The camera can be set up to consider the center region 106 as being of greater importance. The area is arbitrarily selected for illustration to contain 4% of the pixels. The camera in this case would then weigh light intensity from the center 106 more heavily than the edge region 108, by sampling a larger number of pixels per unit area from the center region than from the edge region. For example, FIG. 4b represents a weighted sampled image of image 104. The original region 106 is now represented by region 110 occupying 25% of the total sampled image and region 108 represented by sampled region 112 in FIG. 4b. In other words, a particular area of the image can be over sampled in order to weigh it as more important in determining what is a correct exposure. Although the preferred embodiment involves sampling the center region more heavily, alternate embodiments involve sampling more heavily in other areas, or in more than one selected area.”

(Steinberg, col. 8, lines 19 – 57) (Emphasis added)

A thorough reading of this section of Steinberg makes clear that pixels are not given added weight at all. Rather, particular areas of the image are given greater weight. Moreover, this added weight is not based upon distance, but upon a supposed importance of the weighted area of the image. Steinberg does not disclose that any pixels are weighted differently than any others, but rather that supposedly important areas of the image are given greater weight than other areas and this is effected by sampling a greater number of pixels from the supposedly important area.

Applicants further respectfully submit that the combination of Ray does not remedy the defect of Steinberg in this regard.

For these reasons, applicants respectfully submit that claim 1, as amended is not rendered obvious by Steinberg or Ray alone or in combination. Given that claims 2 – 5, 7 – 9, 16 - 20 and 22 – 24 also include the limitations discussed, applicants respectfully submit that claims 2 – 5, 7 – 9, 16 - 20 and 22 – 24 are, likewise, not rendered obvious by Steinberg or Ray alone or in combination.

In regard to new claims 31 – 38, applicants respectfully submit that the combination of Steinberg and Ray does not render these claims obvious due to the limitation of the face detection technique employing rectangular features (e.g., haar classifiers).

For example, the two-step face detection scheme of Ray employs an algorithm that evaluates individual pixels at the second stage. In contrast, the invention as claimed, for example in claim 31, effects identification using a face detection technique employing rectangular features. Claim 31 includes the following limitations.

Within a digital acquisition device with a built in flash unit, a method of perfecting the exposure of an acquired digital image using face detection in said acquired image, comprising:

- (a) identifying a plurality of groups of pixels that correspond to plurality images of faces within said digitally acquired image, and determining corresponding image attributes to said group of pixels, the identifying effected using a face detection technique employing rectangular features;
- (b) performing an analysis of said corresponding attributes of said groups of pixels;
- (c) determining to activate said built-in flash unit based on said analysis; and
- (d) determining an intensity of said built-in flash unit based on said analysis.

(Claim 31) (Emphasis added)

Applicants respectfully submit that neither Steinberg nor Ray, alone or in combination include this limitation. For this reason, applicants respectfully submit that that claim 31 is not rendered obvious by Steinberg or Ray alone or in combination. Given that claims 32 – 38, depend directly or indirectly from claim 31, applicants respectfully submit that claims 32 – 38 are, likewise, not rendered obvious by Steinberg or Ray alone or in combination.

With this amendment it is respectfully submitted the claims satisfy the statutory requirements. In view of the foregoing, it is respectfully asserted that the claims are now in condition for allowance.

Conclusion

It is believed that this Amendment places the above-identified patent application into condition for allowance. Early favorable consideration of this Amendment is earnestly solicited.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case. Please charge any additional required fee or credit any overpayment not otherwise paid or credited to our **Deposit Account No. 50-4399**. A duplicate page is enclosed.

Respectfully submitted,

Dated: January 11, 2008

/Thomas Van Zandt/
Thomas Van Zandt
Reg. No. 43,219

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